No. 12-2007 MONTHLY PACIFIC ENSO DISCUSSION FOR MICRONESIA AND AMERICAN SAMOA

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The Pacific ENSO Applications Center (PEAC) disseminated its fourth quarter 2007 Newsletter (refer to http://www.soest.hawaii.edu/MET/Enso.html). This Discussion complements the quarterly Newsletter. The Climate Prediction Center (CPC) stated the following in its December 6, 2007 *ENSO Diagnostic Discussion* (http://www.cpc.ncep.noaa.gov): "**La Niña is expected to continue into Northern Hemisphere spring 2008.**" In addition, the CPC noted: "La Niña reached moderate strength during November 2007, with below-average sea surface temperature (SST) extending from 160ºE to the South American coast." Equatorial SSTs were at least 1.0ºC below average from 160ºE to South America. In addition, below-average upper-ocean heat content in the central and eastern equatorial Pacific, stronger than average low-level easterly winds in the equatorial Pacific, and enhanced convection over the far western Pacific were observed. CPC stated: "Collectively, these oceanic and atmospheric conditions reflect La Niña."

Nearly all of the latest climate forecast models predict a continued pattern of below-average equatorial SSTs in the central Pacific into the spring of 2008. CPC noted that at least half of the models indicate moderate to strong La Niña conditions through February.

Moderate La Niña conditions are consistent with the observed atmospheric patterns in the western North Pacific. For example, tropical cyclone activity to-date has been a little below normal and displaced to the west. Likewise, monsoon activity has been constrained to the western part of the basin. The trade wind trough is stronger than normal and has set up earlier than normal.

In November, the South Pacific Convergence Zone shifted westward toward Fiji and New Caledonia, reducing rainfall over American Samoa. Nevertheless, rainfall over the Samoa region should be above average for the next few months, with high month-to-month variability expected as the South Pacific Convergence Zone vacillates east and west. Trade winds should continue to dominate the flow in Micronesia, and a strengthening trade wind trough should keep most of Micronesia wetter than normal. Rainfall activity has increased over most of Micronesia. The Mariana Islands and the northern Marshall Islands could see some extended periods of dry weather, but drought conditions are not expected. The westward spread of cooler equatorial SSTs will reduce equatorial rainfall east of 145ºE. Residents of Kapingamarangi should closely monitor rainfall and implement water conservation measures. Monsoon and tropical storm activity for the first half of 2008 should be limited to western Micronesia, and the 2008 season could see a late start. The strong easterly trade winds will keep sea levels 4" to 8" above normal for the next few months in the western Pacific and in the Samoa region. High tides during new and full moons could cause coastal flooding through February.

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